REMARKS

Claims 1, 29, 32 and 49-57 are pending. Claims 44-48 were canceled without prejudice or disclaimer as drawn to non-elected inventions and new claims 49-57 have been added. Claims 1, 29 and 32 have been amended herein to more clearly define the invention. Support for the amendments to claim 1 can be found in the specification as filed, *e.g.*, Table 23. Support for new claims 49-57 can be found in the specification as filed, *e.g.*, Tables 25-26, and claims 1-4, 29 and 32 as originally filed. Support for the amendment to Table 1 can be found at page 12, lines 20-22. Support for the amendment to Table 10 can be found at page 12, lines 22-24. Support for the amendment to the specification can be found at, *e.g.*, page 4, line 7. No new matter has been added by these amendments.

Election

The Examiner has indicated that claims 44-48 are grouped within SuperGroup B, Group 14, and do not fall within the elected group. In response, Applicants note that claims 44-48 have been canceled herein, without prejudice or disclaimer.

Priority

Applicants note that the Examiner has indicated that the pending application is entitled to the benefit of priority to USSN 60/182,637, filed on February 15, 2000; USSN 60/237,862, filed on October 4, 2000; and USSN 60/240,316, filed on October 13, 2000.

Information Disclosure Statement

Applicants note that the Examiner has indicated that the search reported cited has been considered but will not be printed on the face of the file.

Objections to the Specification

The Examiner has indicated the following inconsistencies in the specification of the instant application. Applicants thank the Examiner, and respond to the stated objections as follows:

a) The Examiner has indicated that Table 5 lists NOV1 instead of NOV2. In response, Applicants note that Table 5 has been amended herein to recite NOV2.

b) The Examiner has indicated that the sequence listing describes SEQ ID NO: 6 as a 616 amino acid polypeptide instead of a 617 amino acid polypeptide as disclosed in the specification. In response, Applicants note that a replacement sequence listing is filed herewith, wherein SEQ ID NO: 6 is described as a 617 amino acid polypeptide.

c) The Examiner has indicated that Tables 7 and 8 disclose two distinct nucleic acid sequences labeled CHR Y. In response, Applicants note that the specification at page 12, lines 15-20, discloses that the NOV3 nucleic acid has a high degree of homology with two separate human BAC (bacterial artificial chromosome) clones containing sequence information from the human Y chromosome, with accession numbers AC006366.3 and AC010153.3. The Examiner has also indicated that the NOV3 nucleic acid sequence is labeled SEQ ID NO: 5 in Table 6, but is labeled SEQ ID NO: 18 in Table 7 and SEQ ID NO: 20 in Table 8. As suggested by the Examiner, Applicants have amended the specification to describe the nucleic acid sequences using the original SEQ ID NOs. Thus, Tables 7 and 8 have been amended herein to recite SEQ ID NO:5.

d) The Examiner has indicated that the NOV3 is given as SEQ ID NO: 5 in the specification, but is labeled SEQ ID NO: 22 in Table 9, SEQ ID NO: 24 in Table 10; and SEQ ID NO: 27 in Table 11. Applicants have amended the specification to describe the polypeptide sequences using the original SEQ ID NOs. Thus, Tables 9-11 have been amended herein to recite the NOV3 polypeptide of SEQ ID NO:6. The Examiner has also indicated that Tables 9-11 list the aligned polypeptide as "GLY T." In response, Applicants note that Table 10 has been amended herein to correct a typographical error that substituted the term "GLY T" for the correct term "KIAA" as disclosed on page 12, lines 22-24 of the specification. Applicants further note that the two nucleic acid sequences labeled GLY T in Tables 9 and 11 are distinct polypeptide species with different sequences and different accession numbers, and thus Applicants believe these polypeptides correctly have different SEQ ID NOs.

e) The Examiner has indicated that the NOV4 nucleic acid sequence is labeled SEQ ID NO: 7 in the text, but is labeled SEQ ID NO: 28 in Table 13. Applicants have amended the specification to describe the nucleic acid sequences using the original SEQ ID NOs. Thus, Table 13 has been amended herein to recite SEQ ID NO:7.

f) The Examiner has pointed out an apparent typographical error at page 17, line 20, which recites that the NOV5 polypeptide as SEQ ID NO: 9. Applicants have amended the specification to recite that the NOV5 polypeptide as SEQ ID NO:10.

g) The Examiner has indicated that the NOV5 nucleic acid sequence is labeled SEQ ID NO: 9 in the text, but is labeled SEQ ID NOs: 30, 32, 34 and 36 in Tables 15-17, respectively. In response, Applicants have amended the specification to describe the nucleic acid sequences using the original SEQ ID NOs. Thus, Tables 15-17 have been amended herein to recite SEQ ID NO: 9 for NOV5. The Examiner has also indicated that the nucleic acid sequences designated PP1201 are labeled as SEQ ID NO: 31 and 33. Applicants note that two regions of PP1201 are disclosed in Table 15, the first corresponding to nucleotides 5 to 708, and the second corresponding to nucleotides 777 to 1782. Thus, these two sequences are distinct nucleic acid species with different sequences, and thus Applicants believe these nucleic acids correctly have different SEQ ID NOs.

h) The Examiner has indicated that the NOV5 polypeptide sequence is labeled SEQ ID NO: 10 in the text, but is labeled SEQ ID NO: 38 in Table 18. Applicants note that the polypeptide sequence (SEQ ID NO: 38) disclosed in Table 18 is separate and distinct from the polypeptide sequence of SEQ ID NO: 10. Thus, Applicants believe these polypeptides correctly have different SEQ ID NOs.

i) The Examiner has indicated that the NOV6 nucleic acid sequence is labeled SEQ ID NO: 11 in the text, but is labeled SEQ ID NOs: 40 and 43 in Tables 20-22. Applicants have amended the specification to describe the nucleic acid sequence using the original SEQ ID NO. Tables 20-22 have been amended herein to recite SEQ ID NO:11 for the disclosed NOV6 nucleic acid sequences.

j) The Examiner has indicated that the NOV7 nucleic acid sequence is labeled SEQ ID NO: 13 in the text, but is labeled SEQ ID NO: 45 in Table 24. Applicants have amended the specification to describe the nucleic acid sequence using the original SEQ ID NO. Table 24 has been amended herein to recite SEQ ID NO:13.

k) The Examiner has indicated that the NOV7 polypeptide sequence is labeled SEQ ID NO: 14 in the text, but is labeled SEQ ID NOs: 47 and 49 in Tables 25 and 26, respectively. Applicants

have amended the specification to describe the polypeptide sequence using the original SEQ ID NO. Tables 25 and 26 have been amended herein to recite SEQ ID NO:14 for the disclosed NOV7 polypeptide sequence. The Examiner has also indicated that Tables 25 and 26 disclose polypeptides labeled GLY T. In response, Applicants note that the two polypeptides designated "GLY T in Tables 25 and 26 are distinct polypeptides with individual sequences and accession numbers. Further, the two GLY T polypeptides disclosed in Tables 25 and 26 are separate and distinct from the two GLY T polypeptides disclosed in Tables 9 and 11. Thus, these four sequences are distinct polypeptide species with different sequences.

The Examiner has also objected to the specification for various informalities.

a. The Examiner has indicated that the first occurrence of the abbreviation "NOVX" should be defined. In response, Applicants have amended the paragraph beginning on page 1, line 31 to recite, in part, "wherein "NOVX" includes the novel nucleotides and polypeptides disclosed herein." Support for the amendment to the specification can be found at, *e.g.*, page 4, line 7.

b. The Examiner has also indicated an apparent typographical error on page 30, line 21. Applicants thank the Examiner, and have amended the specification to recite "NOV7" instead of "NOV6."

c. The Examiner has further indicated that the numbering of the NOV7 amino acid sequence disclosed in Table 25 is apparently incorrect. Applicants note that the numbering corresponds to the NOV6 nucleic acid sequence encoding the NOV7 polypeptide, and Applicants have amended Table 25 herein to provide numbering corresponding to the amino acid sequence of the NOV7 polypeptide.

d. The Examiner also states that "Tables 2-27 must be in Figures, separate from the text of the specification." (See Office Action, page 4). Applicants traverse this objection. 37 CFR § 1.58(a) states "[t]he specification, including the claims, may contain chemical and mathematical formulas, but shall not contain drawings or flow diagrams. The description portion of the specification may contain tables; claims may contain tables either if necessary to conform to 35 USC 112 of if otherwise found to be desirable." Therefore, the placement of Tables 2-27 in the description portion of the specification is appropriate, and this rejection should be withdrawn.

The Examiner has also indicated that the specification is confusing concerning the functions of NOV3 and NOV7. According to the Examiner, "both are named as N-acetylglucosaminyl transferase; however, in Table 1, only NOV7 is named as such." (See Office Action, page 4). In response, Applicants have amended Table 1 herein to indicate that both NOV3 and NOV7 have homology to N-acetylglucosaminyl transferases. Support for the amendment to Table 1 can be found at page 12, lines 20-22.

The Examiner has also objected to the title as non-descriptive. In response, Applicants note that the title has been amended herein to recite "Human N-Acetylglucosaminyl Transferase Polypeptides and Compositions."

The Examiner has also objected to the abstract as incomplete. In response, Applicants note that the abstract has been amended herein to recite "[t]he present invention provides novel isolated human N-acetylglucosaminyl transferase polypeptides."

For the above-stated reasons, these objections should be withdrawn.

Objection to the Claims

Claims 1-4, 29 and 32 have been objected to for having a typographical error in claim 1. Applicants have canceled claims 2-4 herein. Therefore this objection is moot in regard to these claims. Applicant has amended claim 1 herein to delete the term "sequenceof." Therefore, this objection should be withdrawn.

Rejections under 35 USC 112, second paragraph

Claims 1-4, 29 and 32 are rejected under 35 USC §112, second paragraph, as indefinite. The Examiner notes that the term "mature form" in claim 1, items a and b, is unclear. The Examiner further notes that the difference between items 1a and 1b and items 1c and 1d is unclear. Applicants have amended claim 1 herein to delete the term "mature form" from the claim, and have further amended claim 1, to delete items 1a, 1b, 1d and 1e. Applicants assert that claim 1, as amended herein, is definite. Thus, this rejection can be withdrawn.

The Examiner also notes that claim 4 is indefinite in the recitation of the term "conservative substitution." Applicants have canceled claim 4 herein. Therefore this rejection is moot and can be withdrawn.

Rejections under 35 USC 112, first paragraph

Written Description

Claims 1-4, 29 and 32 are rejected under 35 USC §112, first paragraph. Specifically, the Examiner notes that the items 1b, 1d, and 1e of claim 1, drawn to polypeptide sequences that are 85% identical to SEQ ID NO: 14 without also limiting the function of the claimed polypeptides, or fragments thereof, lack written description. Applicants have canceled claims 2-4 herein. Therefore this rejection is moot in regard to these claims. Applicants have amended claim 1 herein to delete items 1b, 1d and 1e, relating to polypeptide sequences that are 85% identical to SEQ ID NO: 14. Also, new claims 49-57 do not recite the phrase "85% identity" described above and, as such, are adequately described in the as-filed specification. Thus, this rejection has been overcome and should be withdrawn.

The Examiner also notes that claims 2 and 3 lack written description, stating that "the specification does not disclose any representative species of allelic variants." (*See* Office Action, page 8). Applicants have canceled claims 2 and 3 herein. Therefore this rejection is moot and can be withdrawn.

Rejection Under 35 USC § 102(b)

Claims 1-4, 29 and 32 have been rejected under 35 USC § 102(b) as anticipated by WO9846757 ("Jacobs"). Claims 2-4 have been canceled herein. This rejection is therefore moot as it applies to these claims. The rejection is traversed to the extent it applies to claim 1 as amended herein, and new claims 49-57.

The Examiner states that "WO9846757 teaches a 756 amino acid sequence, SEQ ID NO: 10, that from 268-294 is identical to the fragments of SEQ ID NO: 14 that is 201-227." (*See* Office Action, page 9). In response, Applicants note that claim 1 has been amended herein to recite "[a]n isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 14." Jacobs does not teach or suggest the polypeptide comprising the amino acid sequence of SEQ ID NO: 14, as required by claim 1, as amended herein. Therefore, Applicants contend that claims 1, 29 and 32 are novel in view of Jacobs.

Applicants assert that this rejection does not apply to new claims 49-57 for the following reasons. New claim 49 recites "[a]n isolated polypeptide comprising the amino acid sequence of

amino acids 67-695 of SEQ ID NO: 14." Jacobs does not teach or suggest the polypeptide comprising the amino acid sequence of amino acids 67-695 of SEQ ID NO: 14, as required by new claim 49. Also, new claim 52 recites "[a]n isolated polypeptide comprising the amino acid sequence of amino acids 67-685 of SEQ ID NO: 14." Jacobs does not teach or suggest the polypeptide comprising the amino acid sequence of amino acids 67-685 of SEQ ID NO: 14, as required by new claim 52. Further, new claim 55 recites "[a]n isolated polypeptide comprising the amino acid sequence of amino acids 158-338 of SEQ ID NO: 14." Jacobs does not teach or suggest the polypeptide comprising the amino acid sequence of amino acids 158-338 of SEQ ID NO: 14, as required by new claim 55. Thus, this rejection should be withdrawn.

Rejection Under 35 USC § 103(a)

Claims 1-4 have been rejected under 35 USC § 103(a) as anticipated by GenBank Accession No. AW177837 ("AW177837") in view of Bork *et al.*., Current Opinion in Structural Biology (1994) 4:393-403 ("Bork"). Claims 2-4 have been canceled herein. This rejection is therefore moot as it applies to these claims. The rejection is traversed to the extent it applies to claim 1 as amended herein, and new claims 49-57.

The Examiner states that "AW177837 teaches a 675 bp mRNA whose sequence exactly encodes SEQ ID NO: 14 residues 176-400 (of the full length 695 sequence," and that "Bork *et al.* teach the technologies of taking small portions of genes (ESTs) and producing the protein products." (See Office Action, page 10). In response, Applicants note that claim 1 has been amended herein to recite "[a]n isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 14." AW177837 does not teach or suggest the polypeptide comprising the amino acid sequence of SEQ ID NO: 14, as required by claim 1, as amended herein. Nor does AW177837 does not teach or suggest the polypeptides comprising the amino acid sequences of amino acids 67-695, 67-685, or 158-338 of SEQ ID NO: 14, as required by new claims 49, 52, and 55, respectively. Moreover, Bork, which does not disclose the nucleic acid sequences encoding the claimed polypeptides or the sequences of the claimed polypeptides, does not cure this deficiency. The Examiner has acknowledged that "[c]laims drawn solely to the full-length protein sequence would also not be anticipated or obviated by this prior art." (See Office Action, page 11). Applicants assert that the amino acid sequences of amino acids 67-695, 67-685, or 158-338 of

SEQ ID NO: 14, as required by new claims 49, 52, and 55, are also unobvious over AW177837 in view of Bork. Therefore, Applicants contend that amended claims 1, 29, and 32, and new claims 49-57, are not obvious over AW177837 in view of Bork. Thus, this rejection should be withdrawn.

CONCLUSION

The Commissioner is hereby authorized to charge any fees that may be due, or credit any overpayment of same, to Deposit Account No. 50-0311, Attorney Reference No. 15966-672 (Cura-172). Should any questions or issues arise concerning this application, the Examiner is encouraged to contact the undersigned at the telephone number provided below.

Respectfully submitted,

April 24, 2003

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Version Marked to Show Amendments

In the Title:

The title was amended as follows:

Human N-Acetylglucosaminyl Transferase Polypeptides and Compositions [Novel polypeptides and nucleic acids encoding same]

In the Abstract:

The abstract was amended as follows:

Human N-Acetylglucosaminyl Transferase Polypeptides and Compositions [Novel polypeptides and nucleic acids encoding same]

Abstract

The present invention provides novel isolated human N-acetylglucosaminyl transferase polypeptides [NOVX polynucleotides and polypeptides encoded by the NOVX polynucleotides. Also provided are the antibodies that immunospecifically bind to a NOVX polypeptide or any derivative, variant, mutant or fragment of the NOVX polypeptide, polynucleotide, or antibody. The invention additionally provides methods in which the NOVX polypeptide, polynucleotide, and antibody are utilized in the detection and treatment of a broad range of pathological states, as well as to other uses].

In the Specification:

The paragraph beginning on page 1, line 31 was amended as follows:

In another aspect, the invention includes a pharmaceutical composition that includes a NOVX nucleic acid and a pharmaceutically acceptable carrier or diluent, wherein "NOVX" includes the novel nucleotides and polypeptides disclosed herein.

Table 1 was amended as follows:

TABLE 1. Sequences and Corresponding SEQ ID Numbers

NOVX Assignment	Internal Identification Number	SEQ ID NO (nucleic acid)	SEQ ID NO (polypeptide)	Homology/ expression
1	28804279.0.7	1	2	Expressed in fetal kidney
2	28326488.0.55	3	4	Expressed in fetal kidney
3	10312947.0.40	5	6	Expressed in pituitary gland and homologous to acetylglucosaminyl transferase-like protein
4	25330368.0.1	7	8	Expressed in mammary gland
5	4004056.0.143	9	10	Expressed in adrenal, mammary, prostate and fetal kidney
6	3084780.0.73	11	12	Expressed in pancreas, fetal lung, stomach
7	SC20692369	13	14	Homologous to N-acetylglucosaminyl transferases

Table 5 was amended as follows:

TABLE 5.

```
NOV2[1]: 1   atgaccatgcatccatttacagtaaagggattgcctacatctcagacaacacttcatgta 60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90905 atgaccatgcatccatttacagtaaagggattgcctacatctcagacaacacttcatgta 90846

NOV2[1]: 61  aagtacacaaatcaaggaaacagcttcatcactgatgttacctttaatctaacaagatct 120
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90845 aagtacacaaatcaaggaaacagcttcatcactgatgttacctttaatctaacaagatct 90786

NOV2[1]: 121 ctataaaacaagaaaacctctacgtacagatcttttaaaattaaagcaggcatctttgct 180
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90785 ctataaaacaagaaaacctctacgtacagatcttttaaaattaaagcaggcatctttgct 90726

NOV2[1]: 181 gatccacctctataagttgcaggttgagtatctcttatctgaaatgctagagaccagaag 240
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90725 gatccacctctataagttgcaggttgagtatctcttatctgaaatgctagagaccagaag 90666

NOV2[1]: 241 tgtttcaggtttcagatatttagattttggaatatttgcatatacacgagatatccaggg 300
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90665 tgtttcaggtttcagatatttagattttggaatatttgcatatacacgagatatccaggg 90606

NOV2[1]: 301 gaagagacccaagtctaaacatgaaattcatttatgtttcatatacacctcatatatata 360
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90605 gaagagacccaagtctaaacatgaaattcatttatgtttcatatacacctcatatatata 90546

NOV2[1]: 361 tagcctgaaggtaattttatacagtatttataatttgtccaaggaacaaagttttgactg 420
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90545 tagcctgaaggtaattttatacagtatttataatttgtccaaggaacaaagttttgactg 90486
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NOV2[1]: 421 tgttttgactatgactcgtcatgtgaagtcatatgtggaattttccacttgtggcatcac 480
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90485 tgttttgactatgactcgtcatgtgaagtcatatgtggaattttccacttgtggcatcac 90426

NOV2[1]: 481 acaggcactcaaaaagcttcagatttgggagcatattggatttcgcatattcagattagg 540
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90425 acaggcactcaaaaagcttcagatttgggagcatattggatttcgcatattcagattagg 90366

NOV2[1]: 541 gatgctcaacccatactcagtttaccagtnnnnnnncataatgtttgcaattactcctcc 600
             |||||||||||||||||||||||||||||      ||||||||||||||||||||||
CHR11: 90365 gatgctcaacccatactcagtttaccagtaaaaaaacataatgtttgcaattactcctcc 90306

NOV2[1]: 601 ttttaaatatataattatttttggtatgggggaaaagagtgagaactttatttcac 656 (nucleotides
1-656 of SEQ ID NO: 3[(SEQ ID NO. 16)]
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
CHR11: 90305 ttttaaatatataattatttttggtatgggggaaaagagtgagaactttatttcac 90250 (SEQ ID
NO. 17)
```

The paragraph beginning on page 10, line 1 was amended as follows:

```
NOV1: 601    ttttaaatatataattatttttggtatgggggaaaagagtgagaactttatttcac 656
(nucleotides 1-656 of SEQ ID NO:1) [(SEQ ID NO. 16)]
```

The paragraph beginning on page 13, line 1 was amended as follows:

```
NOV3: 121    cgccactgcactccagcctgggcgacagagcgagactccgtctc 164 (nucleotides 1-164 of
SEQ ID NO:5) [(SEQ ID NO.: 18)]
```

The paragraph beginning on page 13, line 17 was amended as follows:

```
NOV3: 121    cgccactgcactccagcctgggcgacagagcgagactccgtctc 164  (nucleotides 1-164 of
SEQ ID NO:5) [(SEQ ID NO.: 20)]
```

The paragraph beginning on page 13, line 50 was amended as follows:

```
NOV3: 441  RRKAALVVPAFETLRYRFSFPHSKVELLALLDAGTL 476 (amino acids 22-476 of
SEQ ID NO:6)[(SEQ ID NO.: 22)]
```

Table 10 was amended as follows:

Table 10.

```
NOV3: 22   HLHLVTDAVARNILETLFHTWMVPAIDPVSPYHADQLKPQVSWIPNKHYSGLYGLMKLVL 81
           * **+ *++*  ** *** ******+  *  *+***+** +***********+********
KIAA [GLY T]: 234 HFHLIADSIAEQILATLFQTWMVPAVR-VDFYNADELKSEVSWIPNKHYSGIYGLMKLVL
292

NOV3: 82   PNALPAELARVIVLDTDVTFASDISELWALFAHFSDTQAIGLVENQSDWYLGNLWLNHRP 141
              *** * ********+***+**+****+*  *   * +*************** ****
KIAA [GLY T]: 293 TKTLPANLERVIVLDTDITFATDIAELWAVFHKFKGQQVLGLVENQSDWYLGNLWKNHRP
352

NOV3: 142  WPALGRGFNTGVILLRLDRLRQAGWEQMWRLTARRELLSLPATSLADQDIFNAVIKEHPG 201
           ********+******* **+**+  ******** ***+ + +***************++*
```

KIAA [GLY T]: 353 WPALGRGYNTGVILLLLDKLRKMKWEQMWRLTAERELMGMLSTSLADQDIFNAVIKQNPF 412

NOV3: 202 LVQRLPCVWNVQLSDHTLAERCYSEASDLKVIHWNSPKKLRVKNKHVEFFRNFYLTFLEY 261
** +*** ********* +*+** + ************************** *******
KIAA [GLY T]: 413 LVYQLPCFWNVQLSDHTRSEQCYRDVSDLKVIHWNSPKKLRVKNKHVEFFRNLYLTFLEY 472

NOV3: 262 DGNLLRRELFVCPSQPPPGXXXXXXXXXXXXXXXPCFEFRQQQLTVHRVHVTFL-XXXXX 320
********** ***+ *+***+++ **** *+ **
KIAA [GLY T]: 473 DGNLLRRELFGCPSEADVNSENLQKQLSELDEDDLCYEFRRERFTVHRTHLYFLHYEYEP 532

NOV3: 321 XXXXXDVTLVAQLSMDRLQMLEALCRHTPGPMSLALYLTDAEAQQFLHFVEASPVLAARQ 380
******************+*+* **+******+******** + + * ** +*
KIAA [GLY T]: 533 AADSTDVTLVAQLSMDRLQMLEAICKHWEGPISLALYLSDAEAQQFLRYAQGSEVLMSRH 592

NOV3: 381 DVAYHVVYREGPLYPVNQLRNVALAQALTPYVFLSDIDFLPAYSLYDYLRASIEQLGLGS 440
+* **+**+** **** *****+ ***+********** * **+*** *+ ** * +
KIAA [GLY T]: 593 NVGYHIVYKEGQFYPVNLLRNVAMKHISTPYMFLSDIDFLPMYGLYEYLRKSVIQLDLAN 652

NOV3: 441 RRKAALVVPAFETLRYRFSFPHSKVELLALLDAGTLYTFRYGEWPRGHAPTDYARWREAQ 500
+* *++********** *** ** ***++** ***+**** * +******++*+** *
KIAA [GLY T]: 653 TKK-AMIVPAFETLRYRLSFPKSKAELLSMLDMGTLFTFRYHVWTKGHAPTNFAKWRTAT 711

NOV3: 501 APYRVQWAANYEPYVVVPRDCPRYDPRFVGFGWNKVAHIVELDAQEYELLVLPEAFTIHL 560
****+* *++******* **** ** **********+*** **** +*** *+ **+
KIAA [GLY T]: 712 TPYRVEWEADFEPYVVVRRDCPEYDRRFVGFGWNKVAHIMELDVQEYEFIVLPNAYMIHM 771

NOV3: 561 PHAPSLDISRFRSSPTYRDCLQALKDEFHQDLSRHHGAAALKYLPA 606 amino acids 22-606 of SEQ ID NO:6) [(SEQ ID NO.: 24)]
***** **++***+ ** **+ **+** **+** +* ****** *
KIAA [GLY T]: 772 PHAPSFDITKFRSNKQYRICLKTLKEEFQQDMSRRYGFAALKYLTA 817 (SEQ ID NO.: 25)

Where * indicates identity and + indicates similarity.

The paragraph beginning on page 15, line 4 was amended as follows:

NOV3 437 GLGSRRKAALVVPAFETLRYRFSFPHSKVELLALLDAGTL 476 amino acids 434-622 of SEQ ID NO:6) [(SEQ ID NO.: 27)]

The paragraph beginning on page 16, line 36 was amended as follows:

NOV4: 133 gtgagccaagattgtgccactgcactccagcctgggcaacaaagtgagactct 185
(nucleotides 13-185 of SEQ ID NO: 7) [(SEQ ID NO.: 28)]

The paragraph beginning on page 17, line 7 was amended as follows:

A NOV5 sequence according to the invention includes the nucleic acid shown in Table 14. The disclosed nucleic acid encodes a polypeptide related to a neural membrane protein. The

disclosed NOV5 nucleic acid are present in adrenal, mammary, prostate, testis, uterus, bone marrow, melanoma, pituitary, thyroid, spleen, placenta, bone marrow, mammary gland, fetal thymus - CRL7046, osteogenic sarcoma cell lines - HTB96, fetal lung, thalamus, fetal kidney, and Burkitt's lymphoma (Raji). Expressed sequence tag (EST) data suggest NOV5 sequences are expressed in aorta, blood, bone, brain, breast, central nervous system, colon, foreskin, germ cell, heart, kidney, larynx, lung, lymph, muscle, ovary, pancreas, parathyroid, placenta, pooled, prostate, stomach, testis, tonsil, uterus, whole embryo, blood, breast, cervix, colon, head and neck, lung, ovary, and stomach. The disclosed nucleic acid (SEQ ID NO:9) is 2,059 nucleotides in length and contains an open reading frame (ORF) that begins with an ATG initiation codon at nucleotides 63-65 and ends with a TGA stop codon at nucleotides 1,022-1,024, as is shown in Table 14. The nucleic acid sequence includes a Kozak consensus sequence. The representative ORF encodes a 320 amino acid polypeptide (SEQ ID NO: 10 [9]). The predicted MW of the NOV5 polypeptide is 35,204.3 Da. Putative untranslated regions upstream and downstream of the coding sequence are underlined in SEQ ID NO: 9.

The paragraph beginning on page 18, line 53 was amended as follows:

The disclosed NOV5 nucleic acid has a high degree of homology (100% identity) with a region of the gene encoding the uncharacterized human PP1201 protein (PP1201; Genbank Accession No.: NM022152.1), as is shown in Table 15. Also, the NOV5 nucleic acid has a high degree of homology (99% identity) with regions of the human BAC genomic clone RP11-378A13 from chromosome 2 (Genbank Accession No.: AC021016.4; CHR 2), as is shown in Table 16. Furthermore, the NOV5 nucleic acid has a high degree of homology (100% identity) with portions of a polynucleotide sequence from US Patent 5,843,716 (Seq2; Accession No.: AR062278), as is shown in Table 17. Still further, the polypeptide of SEQ ID NO: 38 [NOV5 nucleic acid] has homology (70% similarity, 83% identity) with the rat neural membrane protein 35 (NMP 35; Accession No.: AAC 324631.1), as shown in Table 18.

The paragraph beginning on page 20, line 12 was amended as follows:

NOV5: 661 tggtatccatttcagtcaccatcttctgctttcagaccaaggtg 704 (nucleotides 1-704 of SEQ ID NO: 9) [(SEQ ID NO.: 30)]

The paragraph beginning on page 21, line 41 was amended as follows:

NOV5: 2013 ccccattcttgaaagctgctggggcctccttgcaggcttctggatc 2058 (nucleotides 1053-

2058 of SEQ ID NO: 9) [(SEQ ID NO. 32)]

The paragraph beginning on page 23, line 1 was amended as follows:

NOV5: 2031 ctggggcctccttgcaggcttctggatc 2058 (nucleotides 1131-2058 of SEQ ID NO: 9) [(SEQ ID NO. 34)]

The paragraph beginning on page 24, line 33 was amended as follows::

NOV5: 2013 ccccattcttgaaagctgctggggcctccttgcaggcttctggatc 2058 (nucleotides 1053-2058 of SEQ ID NO: 9) [(SEQ ID NO. 36)]

The paragraph beginning on page 27, line 54 was amended as follows:

NOV6: 793 aaaatatcc 801 (nucleotides 253-801 of SEQ ID NO: 11) [(SEQ ID NO.: 40)]

The paragraph beginning on page 28, line 48 was amended as follows:

NOV6: 793 aaaatatcc 801 (nucleotides 253-801 of SEQ ID NO: 11) [(SEQ ID NO.: 40)]

The paragraph beginning on page 28, line 48 was amended as follows:

NOV6: 427 atccagacaatgctgt 442 (nucleotides 67-442 of SEQ ID NO: 11) [(SEQ ID NO.: 43)]

The paragraph beginning on page 30, line 19 was amended as follows:

A NOV7 sequence according to the invention includes the nucleic acid and encoded polypeptide shown in Table 23. The encoded polypeptide is related to N-acetylglucosaminyltransferase III (GlcNAc-TIII). The tissue of origin of the NOV7 [NOV6] nucleic acid is pancreas. The disclosed nucleic acid (SEQ ID NO:13) is 2,357 nucleotides in length and contains an open reading frame (ORF) that begins with an ATG initiation codon at nucleotides 18-20 and ends with a TGA stop codon at nucleotides 2103-2105, as shown in Table 23. The representative ORF encodes a 695 amino acid polypeptide (SEQ ID NO: 14). Putative untranslated regions upstream and downstream of the coding sequence are underlined in SEQ ID NO: 13.

The paragraph beginning on page 33, line 23 was amended as follows:

NOV 7: 1000 aattcttccgcaatttctacctgaccttcctggagta 1036 (nucleotides 880-1036 of SEQ

ID NO: 13) [(SEQ ID NO.: 45)]

Table 25 was amended as follows:

```
NOV 7:     67 [199] KCELLHVAIVCAGHNSSRDVIILVKSMLFYRKNPLHLHLVTDAVARNILETLFHTWMVPA 126
[378]
             *** +*********+*+*****+ ****+**+*+**** **+ *+++  ** *** ******
GLY T:   134 KCETIHVAIVCAGYNASRDVVTLVKSVLFHRRNPLHFHLIADSIAEQILATLFQTWMVPA 193

NOV 7:    127 [379] VRVSFYHADQLKPQVSWIPNKHYSGLYGLMKLVLPSALPAELARVIVLDTDVTFASDISE 186
[558]
             *** **+***+** +***********+********   *** * ********+***+***+*
GLY T:   194 VRVDFYNADELKSEVSWIPNKHYSGIYGLMKLVLTKTLPANLERVIVLDTDITFATDIAE 253

NOV 7:    187 [559] LWALFAHFSDTQAIGLVENQSDWYLGNLWKNHRPWPALGRGFNTGVILLRLDRLRQAGWE 246
[738]
             ***+*  *   * +*****************************+******* **+***+  **
GLY T:   254 LWAVFHKFKGQQVLGLVENQSDWYLGNLWKNHRPWPALGRGYNTGVILLLLDKLRKMKWE 313

NOV 7:    247 [739] QMWRLTARRELLSLPATSLADQDIFNAVIKEHPGLVQRLPCVWNVQLSDHTLAERCYSEA 306
[918]
             ******* ***+ + +***************++* ** +*** ********* +*+** +
GLY T:   314 QMWRLTAERELMGMLSTSLADQDIFNAVIKQNPFLVYQLPCFWNVQLSDHTRSEQCYRDV 373

NOV 7:    307 [919] SDLKVIHWNSPKKLRVKNKHVEFFRNFYLTFLEYDGNLLRRELFVCPSQPPPGAEQLQQA 366
[1098]
             *************************** ***************** ***+    +* **+
GLY T:   374 SDLKVIHWNSPKKLRVKNKHVEFFRNLYLTFLEYDGNLLRRELFGCPSEADVNSENLQKQ 433

NOV 7:  367 [1099] LAQLDEEDPCFEFRQQQLTVHRVHVTFLPHEPPPPRPH-DVTLVAQLSMDRLQMLEALCR 425
[1275]
             *++****+* *+****+++ **** *+ ** +*  *     ******************+*+
GLY T:   434 LSELDEDDLCYEFRRERFTVHRTHLYFLHYEYEPAADSTDVTLVAQLSMDRLQMLEAICK 493

NOV 7:  426 [1276] HWPGPMSLALYLTDAEAQQFLHFVEASPVLAARQDVAYHVVYREGPLYPVNQLRNVALAQ 485
[1455]
             ** **+******+******** + + * ** +* +* **+**+**  **** *****+
GLY T:   494 HWEGPISLALYLSDAEAQQFLRYAQGSEVLMSRHNVGYHIVYKEGQFYPVNLLRNVAMKH 553

NOV 7:  486 [1456] ALTPYVFLSDIDFLPAYSLYDYLRASIEQLGLGSRRKAALVVPAFETLRYRFSFPHSKVE 545
[1635]
              ***+********** * **+*** *+ ** * + +** ++********** *** ** *
GLY T:   554 ISTPYMFLSDIDFLPMYGLYEYLRKSVIQLDLANTKKA-MIVPAFETLRYRLSFPKSKAE 612

NOV 7:  546 [1636] LLALLDAGTLYTFRYHEWPRGHAPTDYARWREAQAPYRVQWAANYEPYVVVPRDCPRYDP 605
[1815]
             **++** ***+***** * +******++*+** *  ****+* *++****** **** **
GLY T:   613 LLSMLDMGTLFTFRYHVWTKGHAPTNFAKWRTATTPYRVEWEADFEPYVVVRRDCPEYDR 672

NOV 7:  606 [1816] RFVGFGWNKVAHIVELDAQEYELLVLPEAFTIHLPHAPSLDISRFRSSPTYRDCLQALKD 665
[1995]
             *************+*** **** +*** *+ **+***** **++***+  ** **+ **+
GLY T:   673 RFVGFGWNKVAHIMELDVQEYEFIVLPNAYMIHMPHAPSFDITKFRSNKQYRICLKTLKE 732

NOV 7:  666 [1996] EFHQDLSRHHGAAALKYLPA 685 [2055] (amino acids 67-685 of SEQ ID NO:
14) [(SEQ ID NO.: 47)]
             ** **+** +* ****** *
GLY T:   733 EFQQDMSRRYGFAALKYLTA 752 (SEQ ID NO.: 48)
```

Where * indicates identity and + indicates similarity.

The paragraph beginning on page 34, line 40 was amended as follows:

NOV 7: 302 CYSE----------ASDLKVIHWNSP-------KKLRVKNKHVEFFRNFYLTFL 338 (amino acids 158-338 of SEQ ID NO: 14) [(SEQ ID NO.: 49)]

Please replace the pending sequence listing with the replacement sequence listing filed herewith.

In the Claims:

Claims 1, 29 and 32 were amended and new claims 49-57 were added as follows:

1. (Twice amended) An isolated polypeptide comprising [an amino acid sequence selected from the

group consisting of:

a) a mature form of the amino acid sequenceof SEQ ID NO: 14;

b) a variant of a mature form of the amino acid sequence of SEQ ID NO: 14, wherein any amino acid in the mature form is changed to a different amino acid, provided that no more than 15% of the amino acid residues in the sequence of the mature form are so changed;

c)] the amino acid sequence of SEQ ID NO: 14[;

d) a variant of the amino acid sequence of SEQ ID NO:14 wherein any amino acid specified in the chosen sequence is changed to a different amino acid, provided that no more than 15% of the amino acid residues in the sequence are so changed; and

e) a fragment of any of a) through d)].

2-4. (Canceled).

29. (Amended) A [pharmaceutical] composition comprising the polypeptide of claim 1 and a pharmaceutically acceptable carrier.

32. (Amended) A kit comprising in one or more containers, the [pharmaceutical] composition of claim 29.

49. (New) An isolated polypeptide comprising the amino acid sequence of amino acids 67-695 of SEQ ID NO: 14.

50. (New) A composition comprising the polypeptide of claim 49 and a pharmaceutically acceptable carrier.

51. (New) A kit comprising in one or more containers, the composition of claim 50.

52. (New) An isolated polypeptide comprising the amino acid sequence of amino acids 67-685 of SEQ ID NO: 14.

53. (New) A composition comprising the polypeptide of claim 52 and a pharmaceutically acceptable carrier.

54. (New) A kit comprising in one or more containers, the composition of claim 53.

55. (New) An isolated polypeptide comprising the amino acid sequence of amino acids 158-338 of SEQ ID NO: 14.

56. (New) A composition comprising the polypeptide of claim 55 and a pharmaceutically acceptable carrier.

57. (New) A kit comprising in one or more containers, the composition of claim 56.